

SEQUENCE LISTING

<110> Université de la Méditerranée
INSERM (Institut National de la santé et de la recherche médicale)

<120> Glycopeptides derived from pancreatic structures, antibodies and
applications thereof in diagnostics and therapeutics

<130> B0339WO

<150> FR 04 03378

<151> 2004-03-31

<150> FR 04 13428

<151> 2004-12-16

<160> 14

<170> PatentIn version 3.1

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 Gly Leu Thr Cys Cys Trp Ala Val Ala Ser Ala Ala Lys Leu Gly Ala
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 Val Tyr Thr Glu Gly Gly Phe Val Glu Gly Val Asn Lys Lys Leu Gly
 30 35 40

ctc ctg ggt gac tct gtg gac atc ttc aag ggc atc ccc ttc gca gct 196
 Leu Leu Gly Asp Ser Val Asp Ile Phe Lys Gly Ile Pro Phe Ala Ala
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 Pro Thr Lys Ala Leu Glu Asn Pro Gln Pro His Pro Gly Trp Gln Gly
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 Thr Leu Lys Ala Lys Asn Phe Lys Lys Arg Cys Leu Gln Ala Thr Ile
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 Thr Gln Asp Ser Thr Tyr Gly Asp Glu Asp Cys Leu Tyr Leu Asn Ile
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 Ile Trp Ile Tyr Gly Gly Ala Phe Leu Met Gly Ser Gly His Gly Ala
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 Asn Phe Leu Asn Asn Tyr Leu Tyr Asp Gly Glu Glu Ile Ala Thr Arg
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 Gly Asn Val Ile Val Val Thr Phe Asn Tyr Arg Val Gly Pro Leu Gly
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Cys	Pro	Val	Gly	Asp	Ala	Ala	Arg	Met	Ala	Gln	Cys	Leu	Lys	Val	Thr	
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Glu	Tyr	Pro	Met	Leu	His	Tyr	Val	Gly	Phe	Val	Pro	Val	Ile	Asp	Gly	
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Ile	Asp	Tyr	Ile	Ala	Gly	Thr	Asn	Asn	Met	Asp	Gly	His	Ile	Phe	Ala	
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Ser	Ile	Asp	Met	Pro	Ala	Ile	Asn	Lys	Gly	Asn	Lys	Lys	Val	Thr	Glu	
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Glu	Asp	Phe	Tyr	Lys	Leu	Val	Ser	Glu	Phe	Thr	Ile	Thr	Lys	Gly	Leu	
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Asp	Pro	Ser	Gln	Glu	Asn	Lys	Lys	Lys	Thr	Val	Val	Asp	Phe	Glu	Thr	
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Ser	Arg	Met	Pro	Val	Tyr	Pro	Lys	Trp	Val	Gly	Ala	Asp	His	Ala	Asp	
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Arg	Pro	Gln	Asp	Arg	Thr	Val	Ser	Lys	Ala	Met	Ile	Ala	Tyr	Trp	Thr	
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Asn	Phe	Ala	Lys	Thr	Gly	Asp	Pro	Asn	Met	Gly	Asp	Ser	Ala	Val	Pro	
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Thr	His	Trp	Glu	Pro	Tyr	Thr	Thr	Glu	Asn	Ser	Gly	Tyr	Leu	Glu	Ile	
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Thr	Lys	Lys	Met	Gly	Ser	Ser	Ser	Met	Lys	Arg	Ser	Leu	Arg	Thr	Asn	
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Asp	Gln	Glu	Ala	Thr	Pro	Val	Pro	Pro	Thr	Gly	Asp	Ser	Glu	Ala	Thr	
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Pro	Pro	Val	Pro	Pro	Thr	Gly	Asp	Ser	Gly	Ala	Pro	Pro	Val	Pro	Pro	
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Thr	Gly	Asp	Ser	Gly	Ala	Pro	Pro	Val	Pro	Pro	Thr	Gly	Asp	Ser	Gly	
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Ala	Pro	Pro	Val	Pro	Pro	Thr	Gly	Asp	Ser	Gly	Ala	Pro	Pro	Val	Pro	
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Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Thr Pro Thr Gly Asp	
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Ser Glu Thr Ala Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro	
705 710 715	

gtg ccc ccc acg ggt gac tct gag gct gcc cct gtg ccc ccc aca gat	2212
Val Pro Pro Thr Gly Asp Ser Glu Ala Ala Pro Val Pro Pro Thr Asp	
720 725 730	

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Asp Ser Lys Glu Ala Gln Met Pro Ala Val Ile Arg Phe	
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Ser Val Asp Ile Phe Lys Gly Ile Pro Phe Ala Ala Pro Thr Lys Ala
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Leu Glu Asn Pro Gln Pro His Pro Gly Trp Gln Gly Thr Leu Lys Ala
65 70 75 80

Lys Asn Phe Lys Lys Arg Cys Leu Gln Ala Thr Ile Thr Gln Asp Ser
85 90 95

Thr Tyr Gly Asp Glu Asp Cys Leu Tyr Leu Asn Ile Trp Val Pro Gln
100 105 110

Gly Arg Lys Gln Val Ser Arg Asp Leu Pro Val Met Ile Trp Ile Tyr
115 120 125

Gly Gly Ala Phe Leu Met Gly Ser Gly His Gly Ala Asn Phe Leu Asn
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Asn Tyr Leu Tyr Asp Gly Glu Glu Ile Ala Thr Arg Gly Asn Val Ile
145 150 155 160

Val Val Thr Phe Asn Tyr Arg Val Gly Pro Leu Gly Phe Leu Ser Thr
165 170 175

Gly Asp Ala Asn Leu Pro Gly Asn Tyr Gly Leu Arg Asp Gln His Met
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Ala Ile Ala Trp Val Lys Arg Asn Ile Ala Ala Phe Gly Gly Asp Pro
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210 215 220

Leu Gln Thr Leu Ser Pro Tyr Asn Lys Gly Leu Ile Arg Arg Ala Ile
225 230 235 240

Ser Gln Ser Gly Val Ala Leu Ser Pro Trp Val Ile Gln Lys Asn Pro
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Leu Thr Leu Ala Tyr Lys Val Pro Leu Ala Gly Leu Glu Tyr Pro Met
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Leu His Tyr Val Gly Phe Val Pro Val Ile Asp Gly Asp Phe Ile Pro
305 310 315 320

Ala Asp Pro Ile Asn Leu Tyr Ala Asn Ala Ala Asp Ile Asp Tyr Ile
325 330 335

Ala Gly Thr Asn Asn Met Asp Gly His Ile Phe Ala Ser Ile Asp Met
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Pro Ala Ile Asn Lys Gly Asn Lys Lys Val Thr Glu Glu Asp Phe Tyr

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360

365

Lys Leu Val Ser Glu Phe Thr Ile Thr Lys Gly Leu Arg Gly Ala Lys
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Thr Thr Phe Asp Val Tyr Thr Glu Ser Trp Ala Gln Asp Pro Ser Gln
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Glu Asn Lys Lys Lys Thr Val Val Asp Phe Glu Thr Asp Val Leu Phe
 405 410 415

Leu Val Pro Thr Glu Ile Ala Leu Ala Gln His Arg Ala Asn Ala Lys
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Ser Ala Lys Thr Tyr Ala Tyr Leu Phe Ser His Pro Ser Arg Met Pro
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Val Tyr Pro Lys Trp Val Gly Ala Asp His Ala Asp Asp Ile Gln Tyr
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Val Phe Gly Lys Pro Phe Ala Thr Pro Thr Gly Tyr Arg Pro Gln Asp
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Arg Thr Val Ser Lys Ala Met Ile Ala Tyr Trp Thr Asn Phe Ala Lys
 485 490 495

Thr Gly Asp Pro Asn Met Gly Asp Ser Ala Val Pro Thr His Trp Glu
 500 505 510

Pro Tyr Thr Thr Glu Asn Ser Gly Tyr Leu Glu Ile Thr Lys Lys Met
 515 520 525

Gly Ser Ser Ser Met Lys Arg Ser Leu Arg Thr Asn Phe Leu Arg Tyr
 530 535 540

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 545 550 555 560

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 565 570 575

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 580 585 590

Ala Pro Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro
 595 600 605

Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser
610 615 620

Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val
625 630 635 640

Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp
645 650 655

Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ala Gly Pro Pro Pro
660 665 670

Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly
675 680 685

Asp Ser Gly Ala Pro Pro Val Thr Pro Thr Gly Asp Ser Glu Thr Ala
690 695 700

Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr
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Lys Lys Lys Thr Val Val Asp Phe Glu Thr Asp Val Leu Phe Leu Val
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ccc acc gag att gcc cta gcc cag cac aga gcc aat gcc aag agt gcc 144
Pro Thr Glu Ile Ala Leu Ala Gln His Arg Ala Asn Ala Lys Ser Ala
35 40 45

aag acc tac gcc tac ctg ttt tcc cat ccc tct cgg atg ccc gtc tac Lys Thr Tyr Ala Tyr Leu Phe Ser His Pro Ser Arg Met Pro Val Tyr 50 55 60	192
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Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp	
325 330 335	

tct gag gct gcc cct gtg ccc ccc aca gat gac tcc aag gaa gct cag	1056
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Lys Thr Tyr Ala Tyr Leu Phe Ser His Pro Ser Arg Met Pro Val Tyr
50 55 60

Pro Lys Trp Val Gly Ala Asp His Ala Asp Asp Ile Gln Tyr Val Phe
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Gly Lys Pro Phe Ala Thr Pro Thr Gly Tyr Arg Pro Gln Asp Arg Thr
85 90 95

Val Ser Lys Ala Met Ile Ala Tyr Trp Thr Asn Phe Ala Lys Thr Gly
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Asp Pro Asn Met Gly Asp Ser Ala Val Pro Thr His Trp Glu Pro Tyr
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Thr Thr Glu Asn Ser Gly Tyr Leu Glu Ile Thr Lys Lys Met Gly Ser

130

135

140

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Val Pro Pro Thr Gly Asp Ser Glu Ala Thr Pro Val Pro Pro Thr Gly
 180 185 190

Asp Ser Glu Thr Ala Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro
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Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr
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Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser Gly Ala
 225 230 235 240

Pro Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro
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Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser Gly
 260 265 270

Ala Pro Pro Val Pro Pro Thr Gly Asp Ala Gly Pro Pro Pro Val Pro
 275 280 285

Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser
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Gly Ala Pro Pro Val Thr Pro Thr Gly Asp Ser Glu Thr Ala Pro Val
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Asn Lys Lys Leu Gly Leu Leu Gly Asp Ser Val Asp Ile Phe Lys Gly
20 25 30

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Ile Pro Phe Ala Ala Pro Thr Lys Ala Leu Glu Asn Pro Gln Pro His
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Pro Gly Trp Gln Gly Thr Leu Lys Ala Lys Asn Phe Lys Lys Arg Cys
50 55 60

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Leu Gln Ala Thr Ile Thr Gln Asp Ser Thr Tyr Gly Asp Glu Asp Cys
65 70 75 80

ctg tac ctc aac att tgg gtg ccc cag ggc agg aag caa gtc tcc cgg 288
Leu Tyr Leu Asn Ile Trp Val Pro Gln Gly Arg Lys Gln Val Ser Arg
85 90 95

gac ctg ccc gtt atg atc tgg atc tat gga ggc gcc ttc ctc atg ggg 336
Asp Leu Pro Val Met Ile Trp Ile Tyr Gly Gly Ala Phe Leu Met Gly
100 105 110

tcc ggc cat ggg gcc aac ttc ctc aac aac tac ctg tat gac ggc gag 384
Ser Gly His Gly Ala Asn Phe Leu Asn Asn Tyr Leu Tyr Asp Gly Glu
115 120 125

gag atc gcc aca cgc gga aac gtc atc gtg gtc acc ttc aac tac cgt 432
Glu Ile Ala Thr Arg Gly Asn Val Ile Val Val Thr Phe Asn Tyr Arg
130 135 140

gtc ggc ccc ctt ggg ttc ctc agc act ggg gac gcc aat ctg cca ggt 480
Val Gly Pro Leu Gly Phe Leu Ser Thr Gly Asp Ala Asn Leu Pro Gly
145 150 155 160

aac tat ggc ctt cgg gat cag cac atg gcc att gct tgg gtg aag agg 528
Asn Tyr Gly Leu Arg Asp Gln His Met Ala Ile Ala Trp Val Lys Arg
165 170 175

aat atc gcg gcc ttc ggg ggg gac ccc aac aac atc acg ctc ttc ggg 576
Asn Ile Ala Ala Phe Gly Gly Asp Pro Asn Asn Ile Thr Leu Phe Gly
180 185 190

gag tct gct gga ggt gcc agc gtc tct ctg cag act ctc tcc ccc tac 624
Glu Ser Ala Gly Gly Ala Ser Val Ser Leu Gln Thr Leu Ser Pro Tyr
195 200 205

aac aag ggc ctc atc cgg cga gcc atc agc cag agc ggc gtg gcc ctg Asn Lys Gly Leu Ile Arg Arg Ala Ile Ser Gln Ser Gly Val Ala Leu 210 215 220	672
agt ccc tgg gtc atc cag aaa aac cca ctc ttc tgg gcc aaa aag gtg Ser Pro Trp Val Ile Gln Lys Asn Pro Leu Phe Trp Ala Lys Lys Val 225 230 235 240	720
gct gag aag gtg ggt tgc cct gtg ggt gat gcc gcc agg atg gcc cag Ala Glu Lys Val Gly Cys Pro Val Gly Asp Ala Ala Arg Met Ala Gln 245 250 255	768
tgt ctg aag gtt act gat ccc cga gcc ctg acg ctg gcc tat aag gtg Cys Leu Lys Val Thr Asp Pro Arg Ala Leu Thr Leu Ala Tyr Lys Val 260 265 270	816
ccg ctg gca ggc ctg gag tac ccc atg ctg cac tat gtg ggc ttc gtc Pro Leu Ala Gly Leu Glu Tyr Pro Met Leu His Tyr Val Gly Phe Val 275 280 285	864
cct gtc att gat gga gac ttc atc ccc gct gac ccg atc aac ctg tac Pro Val Ile Asp Gly Asp Phe Ile Pro Ala Asp Pro Ile Asn Leu Tyr 290 295 300	912
gcc aac gcc gcc gac atc gac tat ata gca ggc acc aac aac atg gac Ala Asn Ala Ala Asp Ile Asp Tyr Ile Ala Gly Thr Asn Asn Met Asp 305 310 315 320	960
ggc cac atc ttc gcc agc atc gac atg cct gcc atc aac aag ggc aac Gly His Ile Phe Ala Ser Ile Asp Met Pro Ala Ile Asn Lys Gly Asn 325 330 335	1008
aag aaa gtc acg gag gag gac ttc tac aag ctg gtc agt gag ttc aca Lys Lys Val Thr Glu Glu Asp Phe Tyr Lys Leu Val Ser Glu Phe Thr 340 345 350	1056
atc acc aag ggg ctc aga ggc gcc aag acg acc ttt gat gtc tac acc Ile Thr Lys Gly Leu Arg Gly Ala Lys Thr Thr Phe Asp Val Tyr Thr 355 360 365	1104
gag tcc tgg gcc cag gac cca tcc cag gag aat aag aag aag act gtg Glu Ser Trp Ala Gln Asp Pro Ser Gln Glu Asn Lys Lys Lys Thr Val 370 375 380	1152
gtg gac ttt gag acc gat gtc ctc ttc ctg gtg ccc acc gag att gcc Val Asp Phe Glu Thr Asp Val Leu Phe Leu Val Pro Thr Glu Ile Ala 385 390 395 400	1200
cta gcc cag cac aga gcc aat gcc aag agt gcc aag acc tac gcc tac Leu Ala Gln His Arg Ala Asn Ala Lys Ser Ala Lys Thr Tyr Ala Tyr 405 410 415	1248
ctg ttt tcc cat ccc tct cgg atg ccc gtc tac ccc aaa tgg gtg ggg Leu Phe Ser His Pro Ser Arg Met Pro Val Tyr Pro Lys Trp Val Gly 420 425 430	1296
gcc gac cat gca gat gac att cag tac gtt ttc ggg aag ccc ttc gcc Ala Asp His Ala Asp Asp Ile Gln Tyr Val Phe Gly Lys Pro Phe Ala 435 440 445	1344

acc ccc acg ggc tac cgg ccc caa gac agg aca gtc tct aag gcc atg	1392
Thr Pro Thr Gly Tyr Arg Pro Gln Asp Arg Thr Val Ser Lys Ala Met	
450 455 460	
atc gcc tac tgg acc aac ttt gcc aaa aca ggg gac ccc aac atg ggc	1440
Ile Ala Tyr Trp Thr Asn Phe Ala Lys Thr Gly Asp Pro Asn Met Gly	
465 470 475 480	
gac tcg gct gtg ccc aca cac tgg gaa ccc tac act acg gaa aac agc	1488
Asp Ser Ala Val Pro Thr His Trp Glu Pro Tyr Thr Thr Glu Asn Ser	
485 490 495	
ggc tac ctg gag atc acc aag aag atg ggc agc agc tcc atg aag cgg	1536
Gly Tyr Leu Glu Ile Thr Lys Lys Met Gly Ser Ser Ser Met Lys Arg	
500 505 510	
agc ctg aga acc aac ttc ctg cgc tac tgg acc ctc acc tat ctg gcg	1584
Ser Leu Arg Thr Asn Phe Leu Arg Tyr Trp Thr Leu Thr Tyr Leu Ala	
515 520 525	
ctg ccc aca gtg acc gac cag gag gcc acc cct gtg ccc ccc aca ggg	1632
Leu Pro Thr Val Thr Asp Gln Glu Ala Thr Pro Val Pro Pro Thr Gly	
530 535 540	
gac tcc gag gcc act ccc gtg ccc ccc acg ggt gac tcc gag acc gcc	1680
Asp Ser Glu Ala Thr Pro Val Pro Pro Thr Gly Asp Ser Glu Thr Ala	
545 550 555 560	
ccc gtg ccg ccc acg ggc gac tcc ggg gcc ccc ccc gtg ccg ccc acg	1728
Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr	
565 570 575	
ggt gac tcc ggg gcc ccc cct gtg ccc ccc acg ggt gac tct gag gct	1776
Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser Glu Ala	
580 585 590	
gcc cct gtg ccc ccc aca ggt gac tcc aag gaa gct cag atg cct gca	1824
Ala Pro Val Pro Pro Thr Gly Asp Ser Lys Glu Ala Gln Met Pro Ala	
595 600 605	
gtc att agg ttt tag	1839
Val Ile Arg Phe	
610	

<210> 11
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<400> 11

Ala Lys Leu Gly Ala Val Tyr Thr Glu Gly Gly Phe Val Glu Gly Val
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Asn Lys Lys Leu Gly Leu Leu Gly Asp Ser Val Asp Ile Phe Lys Gly
20 25 30

Ile Pro Phe Ala Ala Pro Thr Lys Ala Leu Glu Asn Pro Gln Pro His

35

40

45

Pro Gly Trp Gln Gly Thr Leu Lys Ala Lys Asn Phe Lys Lys Arg Cys
50 55 60

Leu Gln Ala Thr Ile Thr Gln Asp Ser Thr Tyr Gly Asp Glu Asp Cys
65 70 75 80

Leu Tyr Leu Asn Ile Trp Val Pro Gln Gly Arg Lys Gln Val Ser Arg
85 90 95

Asp Leu Pro Val Met Ile Trp Ile Tyr Gly Gly Ala Phe Leu Met Gly
100 105 110

Ser Gly His Gly Ala Asn Phe Leu Asn Asn Tyr Leu Tyr Asp Gly Glu
115 120 125

Glu Ile Ala Thr Arg Gly Asn Val Ile Val Val Thr Phe Asn Tyr Arg
130 135 140

Val Gly Pro Leu Gly Phe Leu Ser Thr Gly Asp Ala Asn Leu Pro Gly
145 150 155 160

Asn Tyr Gly Leu Arg Asp Gln His Met Ala Ile Ala Trp Val Lys Arg
165 170 175

Asn Ile Ala Ala Phe Gly Gly Asp Pro Asn Asn Ile Thr Leu Phe Gly
180 185 190

Glu Ser Ala Gly Gly Ala Ser Val Ser Leu Gln Thr Leu Ser Pro Tyr
195 200 205

Asn Lys Gly Leu Ile Arg Arg Ala Ile Ser Gln Ser Gly Val Ala Leu
210 215 220

Ser Pro Trp Val Ile Gln Lys Asn Pro Leu Phe Trp Ala Lys Lys Val
225 230 235 240

Ala Glu Lys Val Gly Cys Pro Val Gly Asp Ala Ala Arg Met Ala Gln
245 250 255

Cys Leu Lys Val Thr Asp Pro Arg Ala Leu Thr Leu Ala Tyr Lys Val
260 265 270

Pro Leu Ala Gly Leu Glu Tyr Pro Met Leu His Tyr Val Gly Phe Val
275 280 285

Pro Val Ile Asp Gly Asp Phe Ile Pro Ala Asp Pro Ile Asn Leu Tyr
290 295 300

Ala Asn Ala Ala Asp Ile Asp Tyr Ile Ala Gly Thr Asn Asn Met Asp
305 310 315 320

Gly His Ile Phe Ala Ser Ile Asp Met Pro Ala Ile Asn Lys Gly Asn
325 330 335

Lys Lys Val Thr Glu Glu Asp Phe Tyr Lys Leu Val Ser Glu Phe Thr
340 345 350

Ile Thr Lys Gly Leu Arg Gly Ala Lys Thr Thr Phe Asp Val Tyr Thr
355 360 365

Glu Ser Trp Ala Gln Asp Pro Ser Gln Glu Asn Lys Lys Lys Thr Val
370 375 380

Val Asp Phe Glu Thr Asp Val Leu Phe Leu Val Pro Thr Glu Ile Ala
385 390 395 400

Leu Ala Gln His Arg Ala Asn Ala Lys Ser Ala Lys Thr Tyr Ala Tyr
405 410 415

Leu Phe Ser His Pro Ser Arg Met Pro Val Tyr Pro Lys Trp Val Gly
420 425 430

Ala Asp His Ala Asp Asp Ile Gln Tyr Val Phe Gly Lys Pro Phe Ala
435 440 445

Thr Pro Thr Gly Tyr Arg Pro Gln Asp Arg Thr Val Ser Lys Ala Met
450 455 460

Ile Ala Tyr Trp Thr Asn Phe Ala Lys Thr Gly Asp Pro Asn Met Gly
465 470 475 480

Asp Ser Ala Val Pro Thr His Trp Glu Pro Tyr Thr Thr Glu Asn Ser
485 490 495

Gly Tyr Leu Glu Ile Thr Lys Lys Met Gly Ser Ser Ser Met Lys Arg
500 505 510

Ser Leu Arg Thr Asn Phe Leu Arg Tyr Trp Thr Leu Thr Tyr Leu Ala
515 520 525

Leu Pro Thr Val Thr Asp Gln Glu Ala Thr Pro Val Pro Pro Thr Gly
530 535 540

Asp Ser Glu Ala Thr Pro Val Pro Pro Thr Gly Asp Ser Glu Thr Ala
545 550 555 560

Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr
565 570 575

Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr Gly Asp Ser Glu Ala
580 585 590

Ala Pro Val Pro Pro Thr Gly Asp Ser Lys Glu Ala Gln Met Pro Ala
595 600 605

Val Ile Arg Phe
610

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Phe Asp Val Tyr Thr Glu Ser Trp Ala Gln Asp Pro Ser Gln Glu Asn
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Lys Lys Lys Thr Val Val Asp Phe Glu Thr Asp Val Leu Phe Leu Val
20 25 30

ccc acc gag att gcc cta gcc cag cac aga gcc aat gcc aag agt gcc 144
Pro Thr Glu Ile Ala Leu Ala Gln His Arg Ala Asn Ala Lys Ser Ala
35 40 45

aag acc tac gcc tac ctg ttt tcc cat ccc tct cgg atg ccc gtc tac 192
Lys Thr Tyr Ala Tyr Leu Phe Ser His Pro Ser Arg Met Pro Val Tyr
50 55 60

ccc aaa tgg gtg ggg gcc gac cat gca gat gac att cag tac gtt ttc 240
Pro Lys Trp Val Gly Ala Asp His Ala Asp Asp Ile Gln Tyr Val Phe
65 70 75 80

ggg aag ccc ttc gcc acc ccc acg ggc tac cgg ccc caa gac agg aca 288
Gly Lys Pro Phe Ala Thr Pro Thr Gly Tyr Arg Pro Gln Asp Arg Thr
85 90 95

gtc tct aag gcc atg atc gcc tac tgg acc aac ttt gcc aaa aca ggg	336
Val Ser Lys Ala Met Ile Ala Tyr Trp Thr Asn Phe Ala Lys Thr Gly	
100 105 110	
gac ccc aac atg ggc gac tcg gct gtg ccc aca cac tgg gaa ccc tac	384
Asp Pro Asn Met Gly Asp Ser Ala Val Pro Thr His Trp Glu Pro Tyr	
115 120 125	
act acg gaa aac agc ggc tac ctg gag atc acc aag aag atg ggc agc	432
Thr Thr Glu Asn Ser Gly Tyr Leu Glu Ile Thr Lys Lys Met Gly Ser	
130 135 140	
agc tcc atg aag cgg agc ctg aga acc aac ttc ctg cgc tac tgg acc	480
Ser Ser Met Lys Arg Ser Leu Arg Thr Asn Phe Leu Arg Tyr Trp Thr	
145 150 155 160	
ctc acc tat ctg gcg ctg ccc aca gtg acc gac cag gag gcc acc cct	528
Leu Thr Tyr Leu Ala Leu Pro Thr Val Thr Asp Gln Glu Ala Thr Pro	
165 170 175	
gtg ccc ccc aca ggg gac tcc gag gcc act ccc gtg ccc ccc acg ggt	576
Val Pro Pro Thr Gly Asp Ser Glu Ala Thr Pro Val Pro Pro Thr Gly	
180 185 190	
gac tcc gag acc gcc ccc gtg ccg ccc acg ggc gac tcc ggg gcc ccc	624
Asp Ser Glu Thr Ala Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro	
195 200 205	
ccc gtg ccg ccc acg ggt gac tcc ggg gcc ccc cct gtg ccc ccc acg	672
Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr	
210 215 220	
ggt gac tct gag gct gcc cct gtg ccc ccc aca ggt gac tcc aag gaa	720
Gly Asp Ser Glu Ala Ala Pro Val Pro Pro Thr Gly Asp Ser Lys Glu	
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gct cag atg cct gca gtc att agg ttt tag	750
Ala Gln Met Pro Ala Val Ile Arg Phe	
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<400> 13

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Lys Lys Lys Thr Val Val Asp Phe Glu Thr Asp Val Leu Phe Leu Val
20 25 30

Pro Thr Glu Ile Ala Leu Ala Gln His Arg Ala Asn Ala Lys Ser Ala
35 40 45

Lys Thr Tyr Ala Tyr Leu Phe Ser His Pro Ser Arg Met Pro Val Tyr

50

55

60

Pro Lys Trp Val Gly Ala Asp His Ala Asp Asp Ile Gln Tyr Val Phe
65 70 75 80

Gly Lys Pro Phe Ala Thr Pro Thr Gly Tyr Arg Pro Gln Asp Arg Thr
85 90 95

Val Ser Lys Ala Met Ile Ala Tyr Trp Thr Asn Phe Ala Lys Thr Gly
100 105 110

Asp Pro Asn Met Gly Asp Ser Ala Val Pro Thr His Trp Glu Pro Tyr
115 120 125

Thr Thr Glu Asn Ser Gly Tyr Leu Glu Ile Thr Lys Lys Met Gly Ser
130 135 140

Ser Ser Met Lys Arg Ser Leu Arg Thr Asn Phe Leu Arg Tyr Trp Thr
145 150 155 160

Leu Thr Tyr Leu Ala Leu Pro Thr Val Thr Asp Gln Glu Ala Thr Pro
165 170 175

Val Pro Pro Thr Gly Asp Ser Glu Ala Thr Pro Val Pro Pro Thr Gly
180 185 190

Asp Ser Glu Thr Ala Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro
195 200 205

Pro Val Pro Pro Thr Gly Asp Ser Gly Ala Pro Pro Val Pro Pro Thr
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Gly Asp Ser Glu Ala Ala Pro Val Pro Pro Thr Gly Asp Ser Lys Glu
225 230 235 240

Ala Gln Met Pro Ala Val Ile Arg Phe
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